

REMARKS

There are 12 claims remaining in this application with original claims 1 through 8 having been cancelled. New claim 9 and new claim 17 are independent. Claims 10 through 16 are dependent from claim 9 or intermediate claims and claims 18 through 20 are dependent from independent claim 17.

The Invention

Briefly, Applicants' invention comprises a low cost kit for an inexpensive, quick and easy on site permanent repair of a damaged area in a vehicle lens or bulb housing, thus avoiding the costly replacement of entire lens or housing.

A significant aspect of Applicants' invention is the employment of a flexible translucent repair panel comprising a single thickness. The repair panel has an outer surface suitable for withstanding external vehicular environmental exposure such as rain, road salt, snow, ice, etc. and an inner surface patterned with a plurality of intersecting lines of ridges extending into the thickness of the panel from the inner surface toward the outer surface. The lines of ridges form a grid pattern closely resembling that of the vehicle lens or bulb housing in need of repair.

Applicants' employment of a unitary single thickness panel, as opposed to a lamination of two or more layers, reduces the thickness of the completed repair, simplifies the repair procedure and assures an effective sealing of the interior of the repaired housing.

A further aspect of Applicants' invention is the employment of translucent gasket strips and the placement of such gasket strips at a peripheral border of the inner surface of the panel. The gasket strips permanently adhere and seal the repair panel to the exterior surface of the lens or bulb housing after removal of release sheets.

The employment of a flexible material as the repair panel is also significant. This aspect of Applicants' invention greatly simplifies the repair procedure and eliminates the prior art requirement of heating a repair material in boiling water to enable the material to be bent to conform to the shape of the lens or bulb housing.

The References

Marshall discloses a two part laminated patch which is affixed to a damaged lens. In Marshall, a translucent thermoplastic patch is dimensioned to overlap the damaged area. Unlike Applicants' claimed invention, the thermoplastic patch is not flexible and the patch is required to be heated in boiling water and removed from the water with needle nosed pliers or tweezers (Column 2, lines 15-20. The heated patch is then pressed over the damaged area, utilizing a protective glove or cloth to avoid burns. (Column 2, lines 20-24)

Thereafter, a separate patterned plastic sheet is adhered over the entire inner surface of the thermoplastic patch to form a multiple layered patterned patch.

The patterned patch is thereafter bonded to the damaged lens preferably utilizing solvent-based adhesives (Column 3, lines 58-59).

A repair completed with the Marshall patch comprises a lamination of at least two layers

with the possibility of air pockets and/or future moisture condensation between the layers, i.e. the thermoplastic patch and the patterned plastic sheet. Further, it would appear that the integrity of the completed repair would be dependent upon the effectiveness of the bond between the thermoplastic patch and the patterned plastic sheet, since it is the patterned plastic sheet surface, which is solvent bonded to the exterior of the lens.

The Butt reference discloses a detailed procedure for rebuilding or reconstructing a damaged lens. The damaged portion is removed by cutting and a replacement section is custom configured to match the contour, size, coloring and grooved pattern of the original lens. The rebuilt section is thereafter bonded in place to be flush with the surface of the lens. The disclosed system is essentially is a time consuming labor intensive custom rebuilding of the damaged lens.

The LENS SAVER II reference, accompanying the information disclosure statement filed simultaneously herewith, discloses a repair patch system similar to that of the Marshall patent including a composite multiple lamination repair as well as the requirement for softening the repair panel in boiling water to facilitate shaping.

The Jacino patent (5,955,113) issued to Applicants herein, relates to the LENS SAVER II product and may not constitute "prior art" with reference to the instant application for the reason that the date of issuance of such patent, September 21, 1999 is within one year of the August 12, 2000 priority date of the instant application. In any event, this reference discloses the same requirement for softening by immersion in boiling water to conform to the shape of the lens to be repaired. (Column 4, lines 65-68)

The Claims

With reference now to the claims, independent claim 9 defines the invention as a kit including a flexible translucent repair panel having a substantially uniform thickness. The repair panel is specified as including an outer surface suitable for withstanding external vehicular, environmental exposure and a substantially flat inner surface. Claim 9 further specifies that there are a plurality of intersecting lines of ridges extending into the thickness of the panel from the inner surface toward the outer surface with the lines of ridges forming a grid pattern on the inner surface.

Claim 9 further specifies that at least one portion of the inner surface is free of lines and that the kit also includes a plurality of elongate gasket strips of sufficient total length to overly a peripheral border of the inner surface, with each gasket strip including an adhesive layer covered by a release sheet.

Claim 9 further provides, in a whereby clause, that the panel may be flexed to conform to the contour of the exterior surface of the lens or bulb housing overlying the damaged area and sealed along the peripheral border against the exterior surface of the bulb housing after removal of the release sheets.

The references do not suggest or disclose a uniform thickness flexible repair panel having an outer surface for external vehicular environmental exposure and a flat inner surface with a plurality of intersecting lines and ridges forming a grid pattern. The Marshall and LENS SAVER II references only disclose a composite lamination repair panel comprising an outer layer which is hard and inflexible and is required to be heated in order to conform to the shape of a lens be repaired and an inner sheet having a grid pattern thereon adhered to the outer layer.

The claimed structure greatly simplifies the installation procedure by removing the requirement for heating and the potential danger accompanying such procedure, eliminates the steps of measuring, cutting and bonding the patterned sheet and further provides a repair patch of reduced thickness, since only a single layer is required. The claimed kit also removes the possibility of condensation, air bubbles, contaminants or foreign objects residing between the layers of the lamination.

It is additionally significant that the references do not suggest the structure of employing elongate gasket strips to overlie a peripheral border of the inner surface of the panel. Further, the Marshall reference utilizes a solvent based bonding agent which must be manually applied to the surfaces to be bonded. The employment of a solvent based adhesive raises the potential of marring or damaging surfaces of the lens housing which are not to be overlaid by the repair patch. The use of solvent based adhesives also places additional time constraints on the positioning, alignment and placement of the repair patch on the damaged lens.

In the LENS SAVER II and Jacino (5,955,113) references, an adhesive gasket overlies the entire damaged area of the lens, not just a peripheral area of the patch. Dust, dirt or other contaminants which may be within the lens or bulb housing would tend to adhere to the exposed adhesive surface, detracting from the light transmissibility of the repair and further presenting an unsightly appearance.

It should be additionally noted that there is no motivation or suggestion, absent Applicants' disclosure herein, to combine either the LENS SAVER II reference or the Marshall reference to any other reference of record.

It is therefore submitted that Claim 9 is directed to patentable subject matter and is clearly allowable.

Claim 10, dependent from Claim 9, further provides that the portion of the inner surface free of lines separates the grid into two segments, with one of the segments being larger than the other so that the panel may be cut along the one portion to provide two differently sized repair patches.

Claim 10 is thus directed to a novel feature of Applicants' invention which facilitates the separation of a large panel into two separate panels, each containing a grid pattern. A user with a damaged area smaller than that of the entire panel will thus be able to cut the panel and select the appropriate sized segment for the repair. Allowability of this claim is evident from virtue of its dependently from claim 9, as well as my virtue of the inclusion of patentable subject matter.

Claim 11, also dependent for Claim 9 specifies that the portion of the inner surface free of lines comprises a peripheral border. The employment of a peripheral border free of lines to be covered by the gaskets strip is significant in assuring a moisture proof and to thus restore and maintain the integrity of the interior of the bulb housing.

The references do not teach or suggest the employment of peripheral gasket strips in a lens or bulb housing repair patch and certainly to not teach or suggest the placement of gasket strips along an inner surface of a patch having a peripheral boarder free of lines. Claim 11 is clearly allowable.

Claim 12, dependent from Claim 9, further provides a second plurality of intersecting lines of different dimensions than the ridges forming a grid pattern of the first plurality, so that a grid pattern most closely resembling that of the lens or bulb housing may be selected. Allowability of this claim in view of its dependence from Claim 9 is evident. Further, the references do not teach a repair panel having two differently dimensioned grid patterns formed of intersecting lines of ridges. Claim 12 is clearly allowable.

Claim 13, dependent from Claim 12, provides multiple discrete pluralities of intersecting lines of ridges, with each plurality forming a differently dimensioned grid pattern on the inner surface. Allowability of Claim 13 as dependent from Claim 12, is evident.

Claim 14, dependent from Claim 9, includes the limitation that the gasket strips are translucent. The employment of translucent gasket strips is a significant feature which provides an esthetically acceptable patch with effective light transmission throughout. Allowability of Claim 14 is evident.

Claim 15, dependent from Claim 9, specifies that the plurality of intersecting lines of ridges are perpendicular to one another. This claim is clearly allowable in view of its dependency from Claim 9.

Claim 16, dependent from Claim 9, further specifies that the panel includes a colorant or tint selected from the group consisting of amber or red. Such claimed feature provides for matching the repair patch with the color of the lens or housing being repaired, in the event a clear lens or bulb housing is not being repaired.

New independent Claim 17 defines Applicants' invention as a patch for repairing a damaged area in a vehicle lens or bulb housing with the patch comprising a flexible translucent repair panel having substantially uniform thickness, an outer surface suitable for withstanding external vehicular environmental exposure and a substantially flat inner surface.

Claim 17 further specifies a plurality of intersecting lines of ridges extending into the panel thickness from the inner surface toward the outer surface, with the lines of ridges forming a grid pattern.

Claim 17 further requires that the panel is dimensioned to overlie the damaged area and that the panel includes a periphery with a border of the inner surface surrounding the periphery having an adhesive layer covered with a release strip adhered thereto.

Pursuant to Claim 17, the panel may be flexed to conform to the contour of the exterior surface of the lens or bulb housing overlying the damaged area and sealed to the exterior surface of the lens or bulb housing by removing the release strip and applying a compressive force.

New Claim 17 is clearly allowable. The limitations of this claim are not to be found in any of the references of record or any conceivable combination thereof.

As previously mentioned, the references disclose repair panels which are required to be heated in boiling water in order to be shaped to conform to a lens or bulb housing.

Further, the references teach a lamination of an outer panel and an inner patterned sheet.

Additionally, the references do not teach or disclose the claimed border of the inner surface surrounding the periphery of the panel having an adhesive layer covered with a release strip. The references teach either applying solvent-based adhesives or the employment of an adhesive layer overlying the entire inner surface of the patch, not a peripheral boarder area. As such, the portion of the adhesive layer exposed to the interior of the housing by the damaged area is susceptible to the adhesion of debris, dust and other elements which detract from the effectiveness of the repair. Claim 17 is clearly allowable.

Claim 18, dependent from Claim 17 specifies that the adhesive layer is translucent. Allowability, as dependent from Claim 17, is evident.

Claim 19 specifies that the border of the inner surface (which is covered by the adhesive layer) is free of the grid pattern. Allowability of Claim 19 is evident. The references do not disclose or teach utilizing adhesive layers only along a peripheral border of a patch and certainly do not teach or suggest the employment of a smooth grid free surface for achieving an effective seal between the repair patch and the lens or bulb housing. Claim 19 is clearly allowable.

New Claim 20, dependent from Claim 17, further specifies that the repair panel includes a colorant or tint selected from the group consisting of amber or red. Allowability of this claim, as dependent from Claim 17, is evident.

In view of the foregoing, it is respectfully submitted that all claims remaining in this application are clearly allowable.

WHEREFORE, reconsideration and early allowance are earnestly solicited.

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Respectfully submitted,

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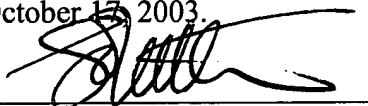
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